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ABSTRACT

This paper discusses how the contributions of psychology may be fruitfully applied to the problem of teacher education and describes a curriculum offering designed and implemented to illustrate the author's conclusions regarding theory and practice. Conclusions from the discussion section are 1) teacher training problems can be seen as emerging from the realm of the practical rather than the theoretic; 2) the contribution of theory to problems in the practical realm needs to be understood in terms of both its constructive and vitiating elements; 3) eclectic operations are required in dealing with problems emerging from the practical realm. Goals set up for the teacher education experience are to provide school-based illustrations of the learning process, to help teacher trainees make explicit their own assumptions about the learning process, and to aid teacher trainees in an understanding of the role of theory and practice in teaching. The second half of the paper describes a curriculum designed to achieve the foregoing goals--a 3-week unit inserted into graduate methods seminars in each of six subject matter areas, the unit focusing on the process of learning the particular discipline. The unit for the foreign language group is outlined in detail including a list of readings and description of discussions and video tape recordings. The seminar unit is then evaluated in terms of broader implications for teacher education. (JS)

FROM LEARNING A THEORY TO THEORIZING ABOUT LEARNING

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How shall the contributions of psychology be fruitfully applied to the problem of teacher education? Many teacher educators will agree that insights drawn from psychology have relevance for teachers in training. Unfortunately, most of these same educators will admit we haven't found the delivery system that will bring the insights to the problem or the problem to the insights.

In a provocative book for teacher educators entitled Teachers for the Real World, B. O. Smith asserted, "The teacher studies theories that lead nowhere, then does his teaching with little theoretical understanding of the situation he meets." (Smith, 1969). In a similar vein, Phillip Jackson may have spoken for many of our students when he noted that the teacher . . . "may discover that he has learned more about alligators then he needs to know." (Jackson, 1969, p. 172)

At a more personal level, three related problems have proven difficult for the writer in his work as a teacher educator. One purpose of this paper will be to examine those difficulties in light of a new conception of the theoretical and the practical. A second purpose will be to extend the implications of this re-appraisal and to describe a curriculum offering for teacher trainees based on these implications.

A Specific Training Problem

In helping teacher trainees examine the teacher's role in the learning process the following three related problems have proven troublesome. First, the lay conception of the theoretical as the bi-polar opposite of the practical is reflected in the teacher trainee. The plea, "Don't give me theory, tell me how pupils learn," is heard frequently

enough to indicate that teachers in training may have read John Dewey's reminder that a theory is extremely practical but they remain unconvinced.

A second problem encountered is the difficulty in providing school based illustrations which add vividness to the study of the learning process. The answer to the question, "How do you teach mathematics?" must be based on the responses to the question, "How do you learn mathematics?" Both questions require an examination of learners in the process of learning.

A slightly different version of the second problem is the plea of the teacher trainee for content relevant to his or her subject matter area. While the uniqueness of the learning process for each discipline may be questioned, this awareness should represent an outcome of a training experience; not a prerequisite for it.

A third problem is the difficulty involved in aiding the teacher trainee in an examination of his own assumptions about the learning process. A teacher trainee is not an atheoretical being. Rather he has some views of how learning takes place but they may be implicit or explicit; confused or clear. The task is not chiefly one of teaching the trainee a theory of learning but rather helping him examine his own implicit theory in light of empirical evidence and alternate constructions of the learning process.

From Theory to Practice: A Reappraisal

At a more general level, the three problems may be conceptualized in either of two ways: 1) What insights can we derive from a study of psychology which have relevance for teacher education? or, 2) What insights

do teachers need to cope with problems in teaching and where can we go for help with these problems? The differences between the alternate constructions of the problem are not trivial. They have their roots in our traditional stance toward the theoretical and the practical within education. Furthermore, the differences between these approaches to the problem of pedagogical training have important ramifications for determining content and method within a teacher training program. Let us examine those differences more closely.

Schwab has argued that the field of curriculum will contribute to the quality of American education ". . . only if curriculum energies are in large part diverted from theoretic pursuits . . . (emphasis mine) to three other modes of operation. These other modes, which differ radically from the theoretic, I shall call, following tradition, the practical, the quasi-practical and the eclectic." (1970, p. 2)

This is not the voice of the practitioner who has missed the subtle relationship between theory and practice. Nor is the attention drawn to the practical realm to be dismissed as just another cry for relevance. Schwab's argument is well reasoned and important for our consideration here. Schwab argued the theoretic differs from the practical in four ways: 1) Their problems originate from different sources, 2) their outcomes are qualitatively different, 3) the theoretic and the practical have distinctly different subject matters and 4) they use different methods.

Keeping in mind the problems of the teacher educator let us look briefly at these four differences. Theoretic problems emerge from the interface between the known and the unknown and exist as states of mind. Practical problems originate from the interface between states of affairs

and people. Practical problems consist of conditions which one feels can and should be changed. Surely, the problems of the teacher can be viewed as being of practical origin. Each teaching act represents an attempt to alter a set of conditions which the teacher feels can and should be changed. The conditions to be changed might be pushing out the classroom walls or pushing back the frontiers of ignorance but the origin of the problem continues to be the practical realm.

Schwab's second point deals with the differential outcome of the theoretic and the practical. While the theoretic is concerned with knowledge the desired outcome of the practical is a decision. Knowledge is presumed to be correct, generalizable and durable. Decisions are judged as better or worse than alternative decisions, frequently are one of a kind, and lack permanence or generalizability. In application to teacher training the designation of teacher as decision maker rather than knowledge seeker appears more appropriate. The minute by minute interactions call for rapid decisions by the teacher. Frequently, the decisions are time bound and situationally specific which have defied researchers' best efforts to order and categorize those decisions.

The third difference noted between the theoretic and the practical deals with their subject matters. The subject matter of the theoretic is assumed to be universal (e.g., mass), extensive (e.g., igneous rock) or pervasive (e.g., electrons). The theoretic studies its subject matter as if time and changing circumstances were of little import. In marked contrast, the subject matter of the practical is particularistic and highly susceptible to change. For example, the teacher may face a practical problem of a rising noise level in a particular study hall with

certain students after the principal made an announcement regarding student suspensions.

Finally, the theoretic and the practical differ in the methods used to achieve their differential aims. Theoretic methods are characterized by their use of a principle. The guiding principle of inquiry shapes the problem, directs the data gathering and aids in the interpretation of the data. The practical method is not one of a guiding principle, but rather a spiralling sequence of behaviors which moves from a vague feeling of discomfort with existing conditions through alternating data gathering and problem shaping cycles. At some point in the process the practical method turns toward a search for solutions and away from a problem identification stage. In this second phase alternate solutions are considered, cost and benefits are estimated and feasibility of the solution is considered. At this point, however, it is noteworthy that the practical method again differs from the theoretic. As solutions are considered the task of problem definition may re-emerge. As an example, the teacher may begin with a problem which involves the acting out behavior of a fifth grade boy in her class. She may consider alternatives such as transferring the boy to a room for emotionally disturbed children or seeking psychiatric testing and therapy for the boy. These alternatives may require so much effort and time that the teacher now defines the problem as one of learning to accommodate her teaching to the acting out behavior of a fifth grade boy in her room.

In summary, problems in teaching can be argued to be "practical" ones. Their origins stem from the interface between states of affairs and people, their outcomes are decisions based on particularistic subject matters and their methods follow no strict guiding principle.

What, then, shall be the role of theory in teacher training which takes decision making as its desired outcome? Schwab speaks to this point as he discussed the eclectic mode of operation. The eclectic ". . . recognizes the usefulness of theory to curriculum decision, takes account of certain weaknesses of theory as ground for decision and provides some degree of repair of these weaknesses." (Schwab, 1970, p. 10)

Theory can contribute to decision making in two ways. First, theory can function as a body of knowledge to provide the decision maker some information about the process under consideration which he need not obtain first hand. For example, Skinner's learning theory provides knowledge about the effects of immediate reinforcement which need not be obtained each time a teacher considers a decision regarding a teaching strategy.

Second, theory provides a set of concepts which provide a language system to discuss the practical problem. In this use of theory Skinner's concepts of operant and respondent conditioning enable the teacher to distinguish two sets of behaviors. No guide for action is indicated by this distinction; the teacher is simply aided in her identification of the components of the practical problem by the use of existing categories.

The weaknesses of theory are described by Schwab as: 1) incompleteness and 2) partiality of view. A theory is designed to simplify

and one cost of simplification is omission. For example, a purely cognitive learning theory cannot cope adequately with emotional needs. Partiality of view occurs as a particular theoretical system becomes so exclusive that alternate constructions of the same phenomena are unlikely to be entertained. For example, a theory explaining teacher behavior totally in terms of individual psychological need dispositions is unable to entertain seriously the concepts of norms, group dynamics and hierarchical status. Each of the weaknesses of theory; subject matter incompleteness and partiality of view, tends to limit the value of theory in dealing with practical issues.

Schwab detailed the contribution which eclectic operations can make to ameliorate the weakness of theory as follows:

> Eclectic operations repair these weaknesses (to some extent) in two ways. First, eclectic operations bring into clear view the particular truncation of subject characteristic of a given theory and brings to light the partiality of its view. Second, eclectic operations permit the serial utilization or even the conjoint utilization of two or more theories on practical problems. The first consequences of eclectic, even without the second, at least enables us to know what we are doing (and omitting) when we use a theory in practical situations. The first and the second together enable us to make sophisticated use of theories without paying the full price of their incompleteness and partiality. (Schwab, 1970, p. 12)

Based on the foregoing discussion, the following implications for teacher education can be drawn.

1. Teacher training problems can be seen as emerging from the realm of the <u>practical</u> rather than the theoretic.

   a. The critical outcomes for teacher training are <u>decisions</u>; not knowledge.

b. Decisions about teaching are couched in particularistic settings with limited generalizability.

c. The origins of the training problems flow from the interface of conditions and people.

d. The method of inquiry leading to decisions about teaching does not involve firm, guiding principles.

2. The contribution of theory to problems in the practical realm needs to be understood in terms of both its constructive and vitiating elements.

3. Eclectic operations are required in dealing with problems emerging from the practical realm.

An Approach to the Problem

The three problems described earlier may now be re-stated as goals for teacher education experience.

1. To provide school based illustrations of the learning process.

2. To help teacher trainees make explicit their own assumptions about the learning process.

3. To aid teacher trainees in an understanding of the role of theory and practice in teaching.

The following section is devoted to a description of a curriculum offering designed to achieve the foregoing goals. The rationale for the undertaking was based upon the analysis of the theoretic and the practical with a particular emphasis upon operating in the eclectic mode. The following overview of the total program is provided to place the "learning process" experience in perspective.

The MAT program at the University of Chicago is composed of six

subject matter areas (Foreign Language, Art, English, Mathematics, Science, and Social Studies) with a subject matter coordinator responsible for the methods instruction in each of these areas. Methods seminars meet weekly throughout the year and focus on curriculum development, teaching strategies, discussion of school observations, and planning for the internship experience. In addition, to the course work in the subject discipline and courses in Sociology of Education and Psychology of Education, it was decided that the writer as psychologist in residence would develop three week experiences within each methods seminar to focus upon the process of learning that particular discipline.

The following three week unit was designed and implemented for each subject matter discipline. The details are given for the Foreign Language seminar but the activities remained basically the same for other subject matter areas with two exceptions: 1) the videotapes were drawn from the particular subject matter under discussion and 2) some variation in the reading material was made to take advantage of relevant papers considered more appropriate for that particular discipline.

WEEK ONE. Two papers on learning theory were distributed prior to the seminar. In the case of the foreign language group, Bruner's (1959) paper entitled The Functions of Teaching and Gagne's (1966) article entitled Contributions of Learning to Human Development were read prior to the first session and discussed in the opening seminar. The focus was upon the context of each theoretical position and similarities and differences between the two positions were noted. Following the brief discussion, a 20 minute video tape of a French lesson was viewed. The

guiding question for the viewing was, "What can you determine from this lesson about the teacher's view regarding the learning of French?" Following the viewing of the tape, the teacher trainees attempted to construct the video teacher's implicit learning theory complete with examples to buttress their arguments. On several occasions brief segments of tape were replayed to clarify misunderstandings. At this point comparisons and contrasts were drawn with the readings and attempts were made to make assumptions explicit in the students' growing awareness of learning theory. At the conclusion of the first seminar, three final readings were distributed: Skinner's (1954) The Science of Learning and the Art of Teaching, Ausubel's (1967) Learning and Classroom Practice and a paper by Shulman (1967) entitled Perspective on the Psychology of Learning and the Teaching of Science and Mathematics. The Shulman paper provided an opportunity to cap the comparisons and contrasts which the group had made of the Bruner and Gagne positions. The Skinner and Ausubel papers would form the basis for the second seminar's opening discussion.

WEEK TWO. The separate positions of Skinner and Ausubel were discussed and a much freer comparison of all the theoretical papers arose during the second session. Attempts were made by students to defend a particular theoretical position in regard to foreign language or to attack other positions. It became apparent that taking a stance regarding the nature of the learning process also required taking a stance regarding the nature of the learner and regarding the nature of the subject matter itself. The language grammarians argued for Gagne's hierarchial model

while the audio-lingualists defended Bruner. Two gains were noted at this point. 1) A growing awareness of a set of concepts that could communicate something important about the learning process and 2) the complex interaction of learning theory, type of subject matter content, nature of the learner and aims of education.

Following this hour of discussion, a second video tape of a French class was presented.[1] Again, the aim was to determine the video teacher's implicit learning theory. Following the viewing, the teacher trainees were asked to speculate regarding the video teachers objectives for the lesson. In short, "How would the teacher respond if we were to ask her what were her objectives and how she planned to reach those objectives?" The shift from the more general "implicit learning theory" set prior to the viewing and the more detailed "objectives and means of implementing those objectives" was a deliberate one. It was an attempt to discuss aims, objectives and means within a theoretical context. Following the trainees speculations as to how the teacher may have responded to the questions, the VTR recorder was again turned on to reveal the video teacher responding to the very question discussed earlier. The comparison of student speculations and teacher responses sparked a most stimulating discussion both where there were matches as well as mismatches of perceptions.

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[1] As an aside, it appeared that the freshness of the video tapes was of some importance to the students. Each tape had been made less than 24 hours before it was used.

At the conclusion of the second seminar, the trainees were asked to think about the nature of their subject matter and the various positions taken regarding the learning process to prepare for the final seminar. No additional readings were recommended.

WEEK THREE. The final seminar began with the writer posing a set of questions addressed to the theoretical positions presented earlier. The usual questions posed were:

1. For each theorist, what is being learned?

2. What are the conditions which each theorist would identify as critical for learning?

3. What is the role of reinforcement for each theorist?

4. What teacher role is indicated by each theorist?

One intent of the questions was sharpen the similarities and differences among the theoretical positions. For example, the first question regarding learning outcomes brought the differences into sharp relief. Students immediately sensed the futility of asking "who's right?" when comparing Bruner and Gagne.

The second intent of the questions and the one which was crucial to the entire experience was to introduce the contribution of the eclectic mode to the selection of teaching strategies. The final culminating discussion focussed upon the relative contributions which each theoretical position could make in the decision making process of selecting a teaching strategy. This required an analysis of the student's assumptions about the learning process, their views about the subject matter and the desired outcomes for their instruction.

The teacher trainees and the subject matter coordinator were relied upon for an analysis of their discipline and the implications of this analysis for selecting a viable model for learning and a matching teaching strategy based on this learning model. Students began by comparing the teaching of grammatical structures with teaching conversational French. The differing outcomes were seen to require differing assumptions as to the implied learning process. The original question, "How do students learn languages?", was rephrased in a much more sophisticated manner by the trainees. They were now analysing their discipline in a way which brought their own implicit theories of learning to the fore. The discussion at this point of the seminar was carried heavily by the trainees and the coordinator which permitted the writer to fade out of the discussion.

Discussion

What was gained from this experience?

First, and not unimportantly, the student response was very positive. Strands of the three week unit were visible throughout the year as students organized their work in curriculum planning and materials production.

From the instructor's perspective there were five gains which could be noted as a result of this means of structuring an alternative to a learning theory course.

First, concrete and vivid images of classroom learning could be drawn from the students own discipline by the use of video tapes. The

dual advantages of realistic classroom settings and subject specific details were helpful in providing a common context on which to build.

Second, the opportunity to draw inferences about the video tape teacher's theoretical biases helped students make explicit their own implicit views of regarding the learning process.

Third, the impetus for discussing instructional strategies came from a practical problem rather than an abstract theoretical frame. Students were forced to understand and rationalize a bit of classroom behavior which engaged them in developing insights rather than only incorporating other people's views.

Fourth, the role of the eclectic mode to facilitate decision making was made evident. Students approached a practical problem with a variety of views to enable them to choose a particular teaching strategy. Rather than view themselves as cognitive structure theoreticans, or behavioristic learning theorists, the emphasis was upon making a defensible decision based upon as many elements of the problem as could be determined.

Related to the use of the eclectic mode is a final point which emerged from the experience. Students were helped to identify the factors which must be considered in future decision making choices regarding instructional strategies. Granted that a decision lacks durability and generalizability, the factors which need to be considered in making decisions remain somewhat more stable. For example, choosing a strategy based upon Gagne's use of hierarchical tasks will continue

to depend upon the level of understanding of the learner, the nature of the subject matter being taught, and the analytical skills of the teacher.

One persistent shortcoming was noted in each of the group settings. No opportunity had been scheduled to permit the trainees to develop a lesson plan, choose an instructional strategy consistent with that particular lesson and then teach that lesson with the instructor available for a critique. Each series of seminars appeared to build to a peak where it would have been natural to move into a microteaching laboratory and then into a naturalistic classroom. These plans are incorporated into this year's plans to enable a more realistic testing of the approach.

Implications

The major implication of taking seriously Schwab's distinction between the theoretic and the practical could be viewed as a directional step in the coming of age of teacher education as an applied science. For too long, teacher educators have apologized for their concern for practice by taking either of two stances; both of which are here argued to be indefensible. One defense has been to hide behind teaching as an art, whatever that might mean. Teacher educators have shared the practitioner's bias against the theoretical but have had nothing substantive to build upon except a denigration of theory or a retreat to teaching as art.

A second defense commonly employed by teacher educators is different in kind but equally unproductive. Teacher educators may embrace

one theoretical position so tightly that it suffocates and other points of view are unnoticed. In either case the search for the Holy Grail continues; Toward a Theory of Instruction becomes not a passing fancy but a way of life. To take seriously the differences between the theoretic and the practical requires a break in the circle of thought which assumes that theory leads to practice which feeds back into theory which leads to improvement of practice. This tight circle denies the important factors of subject matter, outcomes, problem origin and method of inquiry which differentiate teacher education from theoretic pursuits.

The specific implications for teacher training which result from the practical focus can be only suggestive. One possibility is the extension of curriculum offerings of the type described in this paper to other problems in teacher training. For example, rather than the usual course in developmental psychology, an experience could be designed which deals with the more practical concerns which face teachers. Rarely do teachers require a knowledge of developmental psychology per se; more typically they need to make a practical decision which involves a developing adolescent. An experience which grows out of a practical context could be examined and made rational in the same way that the learning process was examined in the curriculum offering described above.

Similarly, problems emerging from classroom management, acting out behavior of pupils, learning diagnoses, curriculum revision and

evaluation of learning can be approached by developing decision making skills from the practical context.

The questions posed early in the paper contrasted a theoretical origin and a practical origin for the raw material of teacher education. The writer shares with Schwab the plea to divert our energies from the quest for the theoretic to the search for the practical. One hopes that as teacher educators we are secure enough to admit we seek different outcomes to different problems with different methods than our theoretic cousins.

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